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Mosquito Net. A Story of the Pioneers of Tropical Medicine

By Cyril Fox. Pp. 253. £11.95. i2i Publishing, Manchester. 2008.
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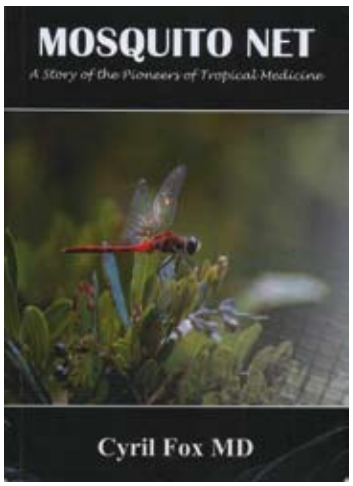

Cyril Fox has done us a favour by writing this gem of a book. The main actor is the mosquito that is the vector of several diseases of man, the most important of which are malaria and yellow fever. From antiquity these scourges have had major impacts on human lives and economies. Dr Fox introduces the great names in tropical medicine who made major discoveries that would benefit mankind enormously. He shares their triumphs and the difficult circumstances in which they worked, but does not spare their weaknesses and jealousies.

In 1880 Alphonse Laveran, a French army surgeon, observed the malaria *Plasmodium* in the first stage of sexual reproduction; in 1894 Patrick Manson shared thoughts with Ronald Ross that the mosquito is malaria host and vector; in 1897 Ronald Ross demonstrated the mosquito's role in malaria transmission and the life cycle of *Plasmodium*; and in 1898 Giovanni Grassi discovered that the female *Anopheles* is the carrier of malaria and demonstrated human transmission via mosquito bite. Ross received the Nobel Prize in 1902 but had unseemly conflicts with his earlier mentors, Manson and Grassi.

Heroes in unravelling the mysteries of the cause of yellow fever include Dr Carlos Finlay (1833 - 1915) – a Cuban doctor of French and Scottish descent who was the first, in 1881, to theorise that a mosquito was a carrier of the organism causing yellow fever. Dr Walter Reed (1851 - 1902) was a US army physician who in 1900 led the team that confirmed the theory that yellow fever is transmitted by mosquitoes. This gave impetus to the new fields of epidemiology and biomedicine and allowed the resumption and completion of work on the Panama Canal (1904 - 1914) by the USA. Three colleagues in Cuba allowed themselves to be bitten by mosquitoes: one died, another survived but remained sickly and died early, and the third survived. Their proof was nevertheless not considered final and experiments continued with volunteers – considered to be the first informed consent studies.

William C Gorgas was a US physician and later surgeon general of the army from 1914 to 1918. In 1898, after the end of the Spanish American War, Gorgas was appointed chief sanitary officer in Havana, working to eradicate yellow fever and malaria. Gorgas capitalised on the momentous work of Major Walter Reed. He implemented far-reaching sanitary programmes including the draining of ponds and swamps, fumigation, mosquito netting, and public water systems that permitted the construction of the Panama Canal. Gorgas received an honorary knighthood from King George V. He died on 3 July 1920 and was given a special funeral in St Paul's Cathedral.

Impressed about what Gorgas had achieved in the Panama Canal he was invited to advise on the high death rates from disease on the South African gold mines. He visited South Africa in 1913 and issued a damning report. The gold mines and South Africa benefited by his suggestion of appointing Dr Alexander Orenstein, who had worked with him in the Suez Canal.

Note: Orenstein subsequently, like Gorgas, achieved high military rank as surgeon general of the South African medical services in World War II and had a major impact on occupational health, nursing education and many other aspects of health services in South Africa.

The book is a good read and a useful reference for the people and events involved in these discoveries.

J P van Niekerk